

REMARKS/ARGUMENTS

Claims 1, 4-13, and 15-25 are pending in the present application. Claims 1, 5, 8, 15, and 21 have been amended. Claims 2, 3, and 14 were previously cancelled. No new matter has been added.

Support for the claim amendments can be found, for example, in FIGS. 1-4 and paragraphs [0020], [0021], [0025], and [0026] of pre-grant publication no. US 2007/0031960.

102/103 Rejections Based on Huhn and/or Lilja

Claim 21 was rejected under 35 U.S.C. § 102(b) as being anticipated by Huhn US 2002/0145121 (“Huhn”). Claims 1, 4, 5, 7-13, 15, 17-20, and 22-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Huhn. Claims 6 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Huhn in view of Lilja US 4,088,448 (“Lilja”). These rejections are respectfully traversed.

Independent Claim 21

Independent claim 21 has been amended to recite, *inter alia*, a format for optical testing of a sample comprising: (i) a well and platform defining a sample testing region configured to receive a predetermined sample volume, (ii) a sample fill nose disposed within a second format member and extending from a sample collection opening at a first end of a sample fill nose to intersect with the well at a second end of the sample fill nose, and (iii) the sample fill nose having an open volume approximately equal to the predetermined sample volume.

Huhn fails to disclose or suggest at least the following features recited in claim 21:

- a format for optical testing; and
- a sample fill nose having an open volume approximately equal to the predetermined sample volume

The object of Huhn is to provide a system for detecting fluids in a microfluidic component that allows differentiations between liquids and gases. (*See* ¶ [0008]). In fact, Huhn teaches that it is “problematic” to implement its invention by means of an optical sensor. (*See* ¶

[0007]). That is, Huhn teaches away from an optical sensor. In contrast, claim 21 recites, *inter alia*, “[a] format for optical testing of a sample”.

Huhn also describes a capillary microchannel formed between a basic body 2 and a lid 3 so that the basic body 2 and the lid 3 define limitation walls for the microchannel 4. (See ¶ [0035]). Huhn further discloses that its microchannel is advantageous because of a substantially constant cross-section in the area of the inclined surfaces and in the areas adjoining them. (See ¶ [0014]). It is noteworthy that Huhn’s disclosure fails to disclose a microchannel other than one with a substantially constant cross-sectional area. Furthermore, Huhn illustrates geometries suggesting that portion 4^V of microchannel 4 has a volume substantially greater than any of the volumes of adjacent portions 4^I, 4^{II}, 4^{III}, or 4^{IV}. In contrast, amended claim 21 recites a sample fill nose having an open volume approximately equal to the predetermined sample volume. Thus, Huhn fails to disclose or suggest the claimed invention.

For at least these reasons, Huhn does not and cannot disclose or suggest amended claim 21, and thus, the rejection of claim 21 should be withdrawn and the claim should be allowable.

Independent Claims 1 and 8

Independent claims 1 and 8 have been amended to recite, *inter alia*, a format for optical testing of a sample comprising a sample fill nose having a sample fill nose cross-section and a vent having a vent cross-section different from the sample fill nose cross-section such that the vent is configured to receive sample overflow from a sample testing region.

Huhn fails to disclose or suggest at least the following features recited in claims 1 and 8:

- a format for optical testing; and
- a vent having a vent cross-section different from the sample fill nose cross-section such that the vent is configured to receive sample overflow from a sample testing region.

As discussed above for claim 21, Huhn teaches that it is “problematic” to implement its invention by means of an optical sensor (*see* ¶ [0007]), and thus, teaches away from an optical sensor. In contrast, claims 1 and 8 recite, *inter alia*, “[a] format for optical testing of a sample”.

In addition, similar to the discussion for claim 21, Huhn describes a capillary microchannel having substantially constant cross-sectional areas formed between a basic body 2 and a lid 3 so that the basic body 2 and the lid 3 define limitation walls for the microchannel 4. (See ¶¶ [0014], [0035]). Huhn describes this as being advantageous. (See ¶ [0014]). The Office action appears to ignore that Huhn does not disclose or illustrate a microchannel other than one with substantially constant cross-sections. (See, e.g., Drawing; ¶¶ [0014], [0036]). That is, applying the teachings of Huhn, a person skilled in the art would understand a channel cross-section remaining substantially constant, not a cross-section that is different, as generally recited in claims 1 and 8.

The specification of the present application provides further support for the non-obviousness of the claimed invention. The specification describes that in order to increase the accuracy of optical sample testing, it is desirable to provide an improved optical format. (See US 2007/0031960, at ¶ [0004]). The specification further describes that formats resulting in improper control of sample volume decrease the accuracy of many prior art optical systems. (See US 2007/0031960, at ¶ [0003]). That is, the specification suggests that dimension or size, as they relate to the volume of a component (e.g., a vent cross-section, sample fill nose cross-section), affect the accuracy of an optical system. The recitations in amended claims 1 and 8, of a sample fill nose having a sample fill nose cross-section and a vent having a vent cross-section different from the sample fill nose cross-section such that the vent is configured to receive sample overflow from a sample testing region, is one example of a non-obvious apparatus that overcomes the problematic prior art described in the specification.

For at least these reasons, Huhn does not and cannot disclose or suggest amended claims 1 and 8, and thus, the rejection of claims 1 and 8 should be withdrawn and the claims should be allowable.

Independent Claim 15

Independent claim 15 has been amended to recite, *inter alia*, a method of manufacturing a format for optical testing, the method comprising, *inter alia*, the acts of: (i) a sample fill nose

notch having a first width; (ii) a vent notch having a second width different than the first width; and (iii) the vent notch configured to receive sample overflow from a sample testing region.

Huhn fails to disclose or suggest at least the following features recited in claim 15:

- a format for optical testing; and
- a vent notch having a second width different than the first width and the vent notch configured to receive sample overflow from a sample testing region

As discussed above, Huhn teaches that it is “problematic” to implement its invention by means of an optical sensor (*see* ¶ [0007]), and thus, teaches away from an optical sensor. In contrast, claim 15 recites, *inter alia*, “a format for optical testing”.

In addition, as discussed for amended claims 1 and 8, Huhn describes a capillary microchannel having substantially constant cross-sectional areas formed between a basic body 2 and a lid 3 so that the basic body 2 and the lid 3 define limitation walls for the microchannel 4. (*See* ¶¶ [0014], [0035]). Huhn describes this as being advantageous. (*See* ¶ [0014]). The Office action similarly appears to ignore that Huhn does not disclose or illustrate a microchannel other than one with substantially constant cross-sections. (*See, e.g.*, Drawing; ¶¶ [0014], [0036]). That is, applying the teachings of Huhn, a person skilled in the art would understand a channel cross-section remaining substantially constant, not a vent notch having a different width than a first width associated with a sample fill nose notch.

Also, similar to the discussion for claims 1 and 8, the specification of the present application provides further support for the non-obviousness of the claimed invention. The specification describes that in order to increase the accuracy of optical sample testing, it is desirable to provide an improved optical format. (*See* US 2007/0031960, at ¶ [0004]). The specification further describes that formats resulting in improper control of sample volume decrease the accuracy of many prior art optical systems. (*See* US 2007/0031960, at ¶ [0003]). That is, the specification suggests that dimension or size, as they relate to the volume of a component (e.g., sample fill nose notch, vent notch), affect the accuracy of an optical system. The recitation in amended claim 15, of a sample fill nose notch having a first width, a vent notch having a second width different than the first width, and the vent notch configured to receive

sample overfill from a sample testing region, is yet another example of a novel and non-obvious method for overcoming the problematic prior art described in the specification.

For at least these reasons, Huhn does not and cannot disclose or suggest amended claim 15, and thus, the rejection of claim 15 should be withdrawn and the claims should be allowable.

Dependent Claim 4-7, 9-13, 16-20, and 22-25

Claims 4-7, 9-13, 16-20, and 22-25, which depend from one of amended independent claims 1, 8, or 15, are neither anticipated by nor rendered obvious by Huhn, Lilja, or any combination thereof, for at least the reasons discussed above in connection with amended claims 1, 8, or 15. Thus, the rejection of dependent claims 4-7, 9-13, 16-20, and 22-25 should be withdrawn and the claims should be allowable.

CONCLUSION

The Applicant submits that claims 1, 4-13, and 15-25 are in condition for allowance and action toward that is respectfully requested. If there are any matters which may be resolved or clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at (312) 425-8552.

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It is believed that no additional fees are due except for the extension of time fee; however, should any additional fees be required (except for payment of the issue fee) or credits for overpayment be due, the Commissioner is authorized to deduct the fees from or credit the overpayments to the Nixon Peabody Deposit Account No. 50-4181, Order No. 247082-000093USPX.

Respectfully submitted,

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